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ABSTRACT

A general study of undergraduate teaching in universities and polytechnic institutes in the United Kingdom was undertaken between 1972 and 1976. The study began at the end of a period of expansion and was completed at the time when economic constraints were increasing in higher education and the report reflects that perspective of change. For the purposes of the study, teaching was interpreted in a broad sense of include curricula, assessment, and advising as well as teaching methods. The theme of the final report is how best to avoid waste of resources, people, and ideas in undergraduate teaching. (MSE)

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MAKING THE BEST OF IT

Reconciling ends, means and resources in higher education

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HE008916

The final report of the Group for Research and Innovation in Higher Education

The Nuffield Foundation

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PREFACE

Our project was set up in 1972. The brief was a wide one: to make a general study of undergraduate teaching in universities and polytechnics in the United Kingdom. Teaching was to be interpreted in its broad rather than narrow sense to include curricula, assessment and advising as well as teaching methods. The study was completed in September 1976, and this report represents the final statement of the Group.

Much of our early work has been described in an interim report, The Drift of Change, published in 1975. The first two years were largely taken up with one-week visits to universities by members of the team, and with the organisation of small conferences on a number of emerging themes, in which we brought together - usually for the first time - teachers in higher education with similar interests. The style of work at this stage was largely descriptive, and the main outcome was the Group's Newsletters, published once or twice a year. These contained short items (some 400 in all) about a wide range of teaching developments which had come to light in interviews with staff and students.

While the visits to universities and polytechnics continued throughout the project (eventually covering all the universities and two-thirds of the polytechnics) the emphasis in the latter two years has been more analytic: the preparation of reports and case-studies on a number of major themes which had emerged from the earlier, descriptive work. Each report represented approximately one term's work by the Group, and was based, like the Newsletters, largely on interview data. Six such reports have been published: Supporting Teaching for a Change, Interdisciplinarity, The Container Revolution, (an examination of unit and

modular schemes), Breadth and Depth, Learning from Learners (a study of student experience) and Up to Expectations (which looks at the problems of entry into student life).

A number of case-studies and selected papers on various curricular topics have also been published: Studies in Laboratory Innovation, Towards Independence in Learning, Small Group Teaching, A Question of Degree, Course Teams, Case-Studies in Interdisciplinarity and Negotiating the Curriculum. All these publications, along with the Newsletters, will continue to be available from the Nuffield Foundation. An annotated list is set out at the end of this report.

This short final report makes no attempt to summarise the earlier publications. Instead, we have tried to apply the knowledge and experience we have accumulated over the past four years tc one basic theme. Our tone is more prescriptive than the one adpoted in our other writings. Previously we have seen our task as one of describing, analysing and clarifying alternatives, rather than making recommendations: in this final document, we go further than before.

It remains for us to thank all those who made this study possible: The Trustees of the Nuffield Foundation, our Consultative Committee, those individuals who helped us to arrange visits in each university and polytechnic, our long-suffering secretaries; but above all, the many students and members of staff who took the time and trouble to talk to us. We hope they will feel that the exercise has been worthwhile.

Tony Becher
Eric Hewton
Malcolm Parlett
Helen Simons
Geoffrey Squires

INTRODUCTION

The decade following the publication of the Robbins Report in 1963 may well be looked back on as one of the most eventful in the history of British higher education. Not only was there expansion along the lines advocated by the Report, but a good deal of innovation as well. If some of these innovations - such as the new universities- turned out to be less novel than was originally hoped, the unexpected capacity of traditional institutions for pragmatic but substantial change more than redressed the balance. The same period brought the designation of the Polytechnics; the setting up of the Council for National Academic Awards; and the birth of the Open University.

Now, as everyone is aware, the climate has changed. Capital expenditure has been cut back; and many universities and polytechnics are either pooling vacant posts or freezing all new appointments. There is pressure on the staff-student ratio; less money for research; and a serious graduate employment problem. Seldom can such a reversal of fortunes have come about so suddenly.

Our own project came right on the cusp of this change. We began our general study of undergraduate teaching in the Indian summer of expansion. When we finished, four years later, having visited 65 university institutions and 20 polytechnics, the current frost had set in. We are thus perhaps in a unique position to comment on teaching in the universities and polytechnics, both by virtue of the scope of our project, and its timing. By teaching, we mean not only teaching methods, but the structure and content of courses, examinations, and advising as well: indeed, anything which has a direct bearing on the student's academic experience.

Our theme is how best to avoid waste: waste of resources; of people; and of ideas. We are not concerned here with such general measures as might be taken to economise in

higher education: the closure of small departments or institutions; the modification of academic tenure; the substitution of student loans for grants; the reform of the system for financing universities and polytechnics. Measures such as these may well be hotly debated in the coming decade: but we have no special contribution to make to that debate. Our project was not concerned with institutional or systemic change. Our focus was teaching and learning: and the waste we shall deal with is day-to-day waste. routine waste. waste in the small change of higher education.

The three sections of this short report are concerned with three aspects of teaching and learning - resources, people, and ideas - and with ways in which the best can be made of all three. It is tempting, in the present economic climate, to think of waste only in the more obvious, material terms: but there is little point in saving time and money if at the same time one is squandering talent or throwing away good ideas. In almost every case, the kinds of changes we shall recommend have already been put into effect somewhere; they have thus passed a certain test of practicability. This is important, since one thing that higher education can do without at present is recipes for elaborate and untried innovations. However, such is the variety of courses and teaching in universities and polytechnics, that almost anything one cares to suggest is being tested out somewhere - albeit on a modest, localised scale.

Some of the best suggestions for avoiding waste are indeed local ones, born of local situations and local possibilities. The man or woman on the job knows more about it than anyone else, and hence often understands best where useful changes can be made. This report is concerned, among other things, to focus attention on such local ingenuity, and to emphasise its importance.

I RESOURCES

One of the effects of the current cutbacks must be to make departments and lecturers look again at how they teach, as distinct from what they teach. A department faced with a less favourable staff-student ratio might simply conclude that everyone should henceforth put in longer hours; however, we should like to suggest a number of ways in which the pattern of teaching might be eyed more critically. There is a difference between working hard and working well - the fact that a lecturer is run off his feet, or that a student is spending eight hours a day in classrooms and laboratories, is no guarantee that either is doing his work in the most effective possible way.

The prevailing pattern of teaching in any department embodies a number of assumptions and habits. Some of these merely re-enact the experience of the lecturers when they themselves were students; some became the accepted norm in days when conditions were different, and there were small classes, leisurely courses, and more docile students. Few of these assumptions and habits are ever consciously called in question, unless circumstances demand it, as they now do. We shall examine five aspects of teaching which departments might usefully re-consider. These are: priorities in method and content; the quality of teaching; the quality of learning; student autonomy; and the use of staff time.

a. Priorities in Methods and Content

We begin by citing the example of a history department in a civic university. This department, like many counterparts elsewhere, had been employing the familiar mixture of lectures, small group work and private study when it was faced with a relatively sudden deterioration in its staff-student ratio, and the consequent impossibility of

carrying on as before. The department was forced to choose: which of its teaching methods were essential to the course and to the study of history, and which were dispensable? After looking carefully at the various alternatives, the department decided to abandon lectures altogether and to concentrate the whole of its staff effort on teaching in small groups. Although there was no increase in the department's money or manpower, there was no catastrophe. The economy measure, although a difficult one, had been thought through rationally; and it worked.

The point here is not to emphasise the value of small group teaching: a different situation might call for a different decision. But in the present economic climate, it seems inevitable that many departments will have to go through the same agonising process of deciding what can be discarded, what must be retained, and what needs to be introduced de novo to meet new needs. Departments of art and design find their very individual mode of teaching under increasing pressure; science and engineering departments are severely constrained by lack of equipment and facilities; other departments have problems financing field trips; and in the humanities, the individual or paired tutorial becomes increasingly difficult to justify.

The question of priorities also concerns academic content. How highly does a department value its array of final-year options: options which, although satisfying to teach, may each attract only a handful of students? Should not the range be pruned, and more resources put into mainstream first and second-year teaching? Projects too, are an important feature of undergraduate work in many departments, and are often thought to develop essential creative or research skills; yet the supervision of projects consumes a good deal of time, and it may be important to ask whether the skills they develop are

essential to all students, or if they are mainly of benefit to intending postgraduates. As against this, it could be argued that the experience of project work will remain with students long after they have forgotten most of the content that was'covered' in conventional lectures and classes. If a department decides to keep its project work, it may need to reduce other demands on staff. Examinations and assessment might also have to be reconsidered in terms of priorities. Long essays and projects take a considerable amount of time and effort to mark: are they worth it? Or conversely, is the writing-off of virtually the whole of the summer term, because of set examinations, justifiable? Does the business of grading students - which can take up as much as a sixth, if not more, of the total teaching time - need to be streamlined and given less emphasis?

The prospect of imminent execution, it has been said, concentrates the mind wonderfully. The future facing university and polytechnic departments is a good deal less Draconian, but the moral may be the same. There is no longer the time, nor are there the resources to do everything, if there ever were, and the skills already developed in assessing the relative merits of students may have to be re-applied to the less familiar task of weighing pros and cons and ordering priorities in teaching methods, content and examinations.

b. The Quality of Teaching

A department may work out its educational priorities, and, in the light of these, decide on a particular pattern of teaching; but that still leaves untouched the problem of the quality of teaching - how well it is actually carried out in practice.

Teaching time is, or has become, a scarce and valuable commodity: so it is important that staff and students make the best use of it. The Open University's two-

week summer schools stand as one example of what can be achieved in a very short period. Most university and polytechnic courses manifest, understandably enough, rather less sense of urgency. To some extent, this is a problem of motivation: it depends how much staff and students want to put into the course. As every lecturer and student knows from experience, the difference between a course which takes off and one that merely limps along is enormous. There are also cases where the will and enthusiasm are there on both sides, but do not get translated into action. Both teachers and students will be aware that things are not going well; but both sides may feel at a loss as to how to remedy the situation.

The causes of the problem may indeed be very complex: subtle differences in expectations about the course; a clash of personal styles; an assumption on the part of the lecturer that students have previously covered ground which they have not. And it is also difficult to admit that things are going wrong, because both staff and students will tend to believe that teaching is a relatively straightforward business, and that if all is not well, it must obviously be somebody's fault.

In fact, teaching is a very subtle process: it is something of a miracle that it often works as well as it does. Those who organise the training of teachers in higher education can sometimes be downright counter-productive, promoting a simplistic view of teaching which reduces it to a matter of 'skills' and 'tips'. There are, of course, identifiable skills involved in lecturing, small group teaching, project supervision and assessment, and staff need to acquire these, preferaby early on in their careers (though not crammed into the first few weeks). But the essential requirement is a change of attitude: from regarding teaching as a process that is either so simple that it it not worth talking about, or so mysterious that it is impossible to talk about, to a more considered view.

The truth, surely, lies in between: teaching is complex, but it can be talked about. Often, the best language for doing so is not the educational officialese of 'objectives', 'reinforcement' and so on, but the vernacular that academics use privately, when they fitfully raise these matters with each other. This vernacular abounds in analogies and metaphors: 'really getting to grips with the subject...laying a good foundation... tying up loose ends...a first-class mind'. It is illuminating, we have found, to analyse the language that lecturers naturally use in describing teaching. It may also be revealing to consider the influence of past experience on current beliefs and practice: all teachers were students once, and this may have played a large part in forming their attitudes. Their expectations about students - the distribution of degree classes, or assumed future careers - may also affect their teaching.

These are, to some extent, personal questions; private until one realises that colleagues have similar or comparable things to talk about. This suggests that the training of staff should be, in general, a small-scale and intimate activity; perhaps with pairs of teachers agreeing to help each other, sitting in on each other's classes from time to time, and small groups of up to five or six meeting periodically to discuss problems as they arise. This may sound too analytic for some tastes: but in practice, the recognition and articulation of common problems and insights should lead to a greater sense of the normality of it all.

To reiterate: we suggest that, apart from some formal induction and the acquisition of immediately necessary skills, lecturers should help each other by discussing and analysing each other's teaching. Through time, some individuals are likely to emerge as particularly good analysts, and might take on a more formal training role within their department or faculty. Such training groups could make use of some of the materials that are available as a stimulus for discussion, such as video-tapes of

small group teaching or case-studies of courses;[1] and they could collectively examine videotapes of their own lectures and seminars.

Returning to the problem with which we started: if a course is not succeeding, despite general good-will, what should the lecturer do? Our answer would be that he should bring the problem into the open, and discuss it with the class. What do they feel is going wrong? Why has the initial enthusiasm fallen off? It is not always easy to make such questions explicit, and unless a teacher has the experience of doing so regularly with his colleagues, he will hardly have the confidence to do so with a class of students. Yet if he takes the students into his confidence, and admits that there is room for improvement, he will almost invariably find that they react sympathetically and constructively. Higher education, more than other levels of education, depends on both teacher and student; and it would be appropriate if this shared responsibility were overtly recognised by making discussion about the curriculum an accepted feature of every course [2] (indeed, we suggest later - in the Section on 'Periodic Review' - how it might be built into the formal scheme of things).

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1. Two U.G.C.-funded projects have produced useful collections of videotapes for study purposes: the Small Group Teaching Project at the University of East Anglia and the Project for Improving Teaching in Small Groups at University College, London.

2. A far-reaching example of this process is documented in one of the Group's publications, Negotiating the Curriculum (see list appended)

c. The Quality of Learning

It sometimes comes as a shock to academics to realise that learning is not the exact inverse of teaching. However sensitive a lecturer may be to the needs of his or her students, it is hard to picture the world from precisely their standpoint - and in particular to realise that there are often several competing demands on their attention. To see a degree programme in its entirety is much less easy for the teachers than for the students who are enrolled on it. However well-planned each component of a particular programme might be, there remains the problem of making sure that the parts add up to a coherent whole.

Seeing things through the eyes of the student can of course go a long way beyond making sure that the overall curriculum is coherent and comprehensive. It may mean trying to enter into the learner's psychological frame of reference, and becoming more sensitive to individual and collective problems of mental and emotional adjustment. This is far from easy. For example, we have the impression that few teachers make enough allowance for the difficulties newly-arrived students have in getting to grips with an unfamiliar learning context, new methods of study, and perhaps new subject-matter (if not a familiar subject in a new guise). First-year students may also have considerable difficulties in estimating the standard of work they have to produce in order to survive, and in working out their level of ability in relation to their peers.

Seeing teaching from the point of view of the learners can be made easier if staff occasionally meet their students to discuss how they study, what kinds of teaching are most helpful, and how they go about mastering new ideas and material. Where teachers have instigated discussion with students on these lines, they seem to have found it enlightening. Occasionally there can be surprising or dismaying discoveries - for example, that, while teaching tends to be linear and regularly paced,

learning takes a far more variable, backwards and forwards course, so that for long periods students may be lost without appearing to be so. One very common form of uncertainty students feel is an unpreparedness to admit that they do not know something, or have failed to understand a crucial point - and this is of course disastrous to the academic enterprise.

A lack of sensitivity or sympathy on the part of the teacher to such difficulties may well result in stolid and unyielding silence in a seminar group, or a panic throwback to the worst excesses of 'A' level regurgitation of facts in an exam. To try to understand where the student stands is not necessarily to be sentimental and soft-headed: it can equally well be in the interests of a hard-line academic approach.

d. Student Autonomy

It is commonly accepted in higher education that students should take an increasing responsibility for their own learning. This idea, simple enough in theory, is rather complex in practice, and is certainly not one that can be quickly or easily realised.

For most students secondary education establishes a pattern of direct dependence on the teacher. This pattern is not easily broken, and indeed continues through higher education in many departments, particularly in faculties of science and technology. The habit of 'no learning without teaching' seems particularly strong in the polytechnics: students there often regard their work as finished when classes finish. For staff too, there is something reassuring about standing up in front of a class: at least knowledge appears to be in transmission, even if it is more difficult to find out whether education is actually taking place. We came across several departments in which students had lectures from 9 till 1 every morning, and laboratory work four afternoons a week. Staff in such departments grossly over-estimate

the amount students can absorb from formal teaching. Much of what they are taught is rapidly forgotten: a useless exercise. In general, such students could do with fewer lectures, fewer taught experiments and problem classes, and should spend much more time working on their own, so that the ratio of contact teaching time to total coursework time could be lowered. Several departments who have tried this have claimed that the extra time spent in guided study or open-ended investigation has paid off in terms of an overall improvement in the quality of students' work.

One thing that enables a student to become more autonomous is better information about his course: what it is meant to achieve, what the logic of the sequence is, what relationship exists between the various parts. Some departments now provide their students with excellent course guides or handbooks, and these not only allow the student to orientate himself more accurately, but save time as well, by answering in advance many of the routine questions that staff have to cope with. Such handbooks also contain detailed information about examinations and assessment, so that students know where they stand, and do not waste their time speculating on the basis of doubtful rumour. [3]

We came across one department in which the differential weightings of course units had been kept a secret by staff because, they said, to make them public would encourage students to play 'the numbers game'. (Predictably, the students were already playing the numbers game - but unfortunately for them, getting it wrong.) Some staff

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3. Departments whose schemes along these lines have been described in the Group's Newsletters include the Veterinary Anatomy Department at Liverpool University (Newsletter 1. p.9): the Physiology Department at Chelsea College, University of London (Newsletter 1. p.28) and the Department of Mathematics at Bath University (Newsletter 2. p.28).

are apt to object that telling students about assessment is not what higher education is about: and that a preoccupation with marks and grades is a sign of a venal and unworthy intellect. Such an attitude is quite unrealistic. As long as the system of marks and degree classes continues in its present form, students are bound to be concerned with it; just as staff, in current conditions, will play the numbers game with student enrolment and drop-out rates. Both are basic currencies of higher education.

Students also need frequent guidance about their own progress, if they are not to be 'working blind'. We met with plenty of nodding agreement on the importance of feedback, but the commitment is not always borne out in practice. Comments on students' essays and experiments can be cursory in the extreme; staff seem to take far less care in commenting on students' work than in presenting their own. A few ticks or crosses in the margin, and a couple of sentences at the end of an essay, are not enough recompense for effort. Shoddy marking invites shoddy assignments.

In addition to providing students with more information about their courses, and more specific comments on their written and practical exercises, several institutions have gone some way towards deliberately equipping them with relevant study skills. [4] This appears to be an area in which there is scope for considerable research and development; some of the problems seem to have as much to do with changes in attitudes towards study as with the acquisition of identifiable skills.

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4. Among others, Brunel University, Kingston Polytechnic and Sussex University run optional study courses which deal partly with reading skills - speed reading, reading strategies - but also tackle general problems to do with the planning and organisation of work. Manchester Polytechnic has recently opened a Study Skill Centre to help students develop learning techniques and to give special support to those with specific learning difficulties.

Finally, students should be given better access to study materials. Rather than the preparation of special study units on an Open University model - an expensive and time-consuming business if it is to be done well - we mean by this helping students to find their way around and make better use of existing books and resources. Sometimes this is simply a matter of taking the time, trouble and thought to draw up a selective reading list, carefully annotated and structured (as against an exhaustive and cumulative one, to which new titles are remorselessly added). Or it may mean collecting useful materials (lecture notes, tapes, models and visual materials in a departmental resource centre - something that has already been effectively done in a number of Chemistry departments.[5] It need not take staff very long to set this up; but for the students it makes all the difference between facing an undifferentiated mass of materials, and being given the few, essential pointers and pathways which will help them to work on their own (with perhaps the bonus of a new social base in a particular corner of the library or the resource centre).

e. The Use of Staff Time

Two members of staff may, on the face of it, have exactly the same amount of time (say 40 hours) to devote to their work, and yet achieve very different results. In practice, a great deal depends on how this time is divided up; how small or large the blocks are; how continuous or discontinuous the tasks; how varied they are; and how easy or difficult it is to attend to the job at hand. In short, there seems to be something that might be described as 'quality of time'.

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5. For example, those at Aston University, Queen Elizabeth College, London and the Polytechnic of the South Bank. Resource centres in Departments of Medicine, Biochemistry and Law are described in Newsletter 6, and one in Business Studies in Newsletter 7.

The prevailing rhythms of academic life are not sacrosanct. They seem to be based on no more than habit and precedent, and perhaps could be altered to the advantage of both staff and students. At the macro level, this may mean looking again at the system of terms and vacations, the origins of which probably lie in ancient agricultural or religious rhythms. Less radically, departments and faculties should explore the possibilities of 'blocking' day-to-day activities in larger units, so that staff have longer, uninterrupted periods for either teaching, research or administrative duties.

Concentrated courses, in which staff and students devote their whole attention to a single task for anything from a day to two weeks, are an option that could be explored more widely. We came across examples of these in a diverse range of subjects. [6] Few would want to organise an entire degree programme in such a way, but concentrated teaching may be appropriate at particular junctures in many courses. It can have the effect of forcing the pace and bringing things to a level of intensity which is rarely experienced in the ordinary pattern of academic work.

A different point about the use of staff time has to do with the internal organisation of universities and polytechnics. It was impossible to escape the impression that some institutions - in particular some new universities and polytechnics - were getting tangled up in their own committee structures; that there were too many committees, with too many members, meeting too often. This inevitably consumes a good deal of staff time and attention: attention which might otherwise be devoted to research or teaching. It might be useful to establish 'committee sabbaticals', whereby a member of staff would be regularly freed from all committee work for a term or a year. On a more ambitious scale, at least one

6. For instance in Social Science at the Polytechnic of Central London, in Mediaeval Studies at Exeter University, and in Biology at Imperial College.

institution - Hatfield Polytechnic - now insists that all committees have to be reviewed annually by the superior body to which they report, and that their continuing existence has to be formally agreed.

Stopping the proliferation of committees does not necessarily mean a return to professorial authoritarianism. Some jobs could perhaps be taken over by administrative assistants, although many academics would be suspicious of such a move; others might be delegated for a stated period of time to 'committees of one' (perhaps relatively junior staff members whose careers might benefit from administrative experience). The size of committees can often be trimmed, and their roles more sharply defined. New members could be more deliberately inducted and instructed in procedures, perhaps by the secretary of the committee, instead of having to learn by simply waiting and watching. Newly-appointed chairmen could also be given some training in the efficient conduct of business. And - as in one or two cases we came across, including the most powerful committee in the University of Oxford - strict time limits could be set for the completion of the agenda, so as to minimise rambling and self-indulgent debate.

The intelligent use of time is one of the least explored aspects of academic life, both on the staff and student sides. Staff in one university have been known to complain of the 'death of a thousand cuts': and it might be salutary for many staff to ask themselves when they last had a serious academic conversation with someone lasting more than an hour. On the student side, the problems are of a rather different kind, and may be more to do with the differences of rhythm between secondary school work and higher education. In both cases, however, it is necessary to recognise that the management of time is a common problem, and one that something could be done about, both by way of initial individual advice, and by changes in institutional rhythms and structures.

We have concentrated, in the first section of the report, on time and teaching resources, and ways in which these could be used more effectively. Departments, it was suggested, should sort out their priorities as regards content and teaching methods, since they can no longer attempt to be all things to all people. The quality of teaching can be improved by subjecting the often ritual use of existing methods to regular collective discussion. Staff should consciously try from time to time to put themselves in the learners' frame of mind. Students should take over more responsibility for teaching themselves; and staff (and students) should work out how to manage their time more efficiently.

This last point conceals a final, if rather diffuse, suggestion. There seems to be an internal limit to the complexity of any institution; a point beyond which more organisation becomes counter-productive. When the institutional environment becomes too complex to read, many staff and students stop participating in it, and either devise their own short-cuts - a kind of administrative black-market - or else simply withdraw and cultivate their own gardens. Whenever a new assessment scheme, new course options, a new pattern of teaching, or a new committee structure is proposed, we would suggest that someone puts the question: is this going to complicate or simplify our lives?

II PEOPLE

During our visits to universities and polytechnics, we were struck by another and less obvious kind of waste: a waste of people. We shall consider three aspects of this problem: the intake of students, both young and adult; staff-student relations; and job satisfaction for staff.

a. Student Intake: the escalator effect

There are some students - and a few staff - who should not be in higher education at all: who have drifted into universities and polytechnics simply because it was the line of least resistance at a particular point in their lives. The 'escalator' effect of secondary education is strong, and students can find themselves attending lectures and working through a degree course for no other reason than that they got the necessary 'A' levels, and that higher education seemed to be the natural next step.

It is surely right to question this assumption that higher education is the natural sequel to secondary education. Many institutions - such as Edinburgh University - now state in their prospectuses that they will hold open places for prospective entrants for a year, thus allowing them to make a break between school and higher education. This seems to us a good move, since however broad or progressive a sixth form is, it is still inescapably part of an educational system which places most of its members in the position of dependents. It cannot be healthy to be defined in such limited terms, year after year, without a break.

However, the option of a year out between school and higher education is not in itself enough to resolve the problem of the inadvertent student, and is in any case less attractive in times of high unemployment. (It is also an option more likely to be taken up by middle-class students who would have the necessary contacts for temporary jobs or trips abroad.) The root of the problem is the advising of school-leavers and sixth-formers. This advising is normally carried out by teachers, and teachers are likely to believe that education (or continued education) is ipso facto a good thing.

It seems that some kind of independent advisory service for young people - a combination of educational and careers advice - is needed, in order to help them make informed choices. However, this idea goes well beyond our remit. Within the higher education system itself, there are various things that might be done - quite apart from improving admissions procedures and making closer links with the schools. It can be made easier for students to transfer courses after they have begun. This is administratively troublesome, but is surely preferable to having them plough on remorselessly with a subject they do not really want to pursue. If a university as large and complex as Cambridge can manage to allow a fairly free traffic between different subjects from Part I to Part II of the Tripos, there seems little reason why other institutions should so strongly discourage it. Students should also be allowed to intermit courses for a year or two, if they wish.

Nothing will happen, however, without a change of attitude on the part of staff and administration. Whatever the selection process, institutions make mistakes; students also make mistakes. There are mismatches of students and courses. That a student should want to withdraw, or to change courses, or drop out for a while, is not a catastrophe. The only catastrophe is to turn such a student away at the end of a first year in which he has failed, without sorting out with him his future plans: in particular a transfer (where this is appropriate) to a different course, or if necessary to a different institution; and, we would add, without giving him some written evidence of his attendance during the first year. The number of transfers or withdrawals is not likely to be so large that one teacher in every faculty (acting as 'transfer officer') could not go into each case, helpfully and personally.

b. Student Intake: mature students

If there are some younger students who should not be in

higher education, there are many older ones who should be and are not. These are adults who, having worked or helped to raise a family for some years, would like the opportunity to study something systematically again. The Open University caters for many of these people, as do further education colleges all over the country. However, it remains relatively difficult for an adult student to enrol in most conventional universities and polytechnics.

It is to the polytechnics, with their stated aim of meeting local needs, that one turns more naturally in this context. Significantly, there has been a considerable increase in unit-credit schemes in polytechnics, which allow students to combine part-time and full-time study in various ways, and to transfer, bank, and finnaly 'cash in' their credits for a degree. The City of London Polytechnic and the Polytechnic of Central London, among many others, have schemes of this kind.

This 'aggregative' model of higher education is of course despised by traditionalists as lacking the essential features of the university experience: the continuity, the depth, the residence, the sense of intellectual community, and so on. There is something more than snobbery or nostalgia in this argument: the traditional model provides a 'total experience' in a way that modular or part-time education does not and seemingly cannot. However, the advantages of opening up higher education to the adult population must far outweigh these shortcomings; for it is there, arguably, rather than at school level, that the greatest wastage of people and lives occurs - men and women stuck in jobs and situations which do not allow them to make anything like full use of their potential.

The broad arguments for continuing or recurrent education are now fairly well known; however, the practical implications are not always spelled out. Staff would have to do more evening teaching;

institutions would have to relax entry conditions and allow students to take parts of courses. Degrees would have to be based on the accumulation of credit, though this does not necessarily entail a complex and bureaucratic system of credits and exchange rates between institutions. The range of specially-designed part-time and post-experience courses would need to be greatly extended, and this could involve fundamental changes in curricular thinking, for example, about the relationship between theory and practice. University extra-mural departments might find a new role in catering for 'associate' students, both by advising on their study programmes and by offering a suitable range of preparatory pre-degree courses.

Finally, however, there is a major problem of finance. Mature students might be helped by increased grants, or by interest-free loans repayable by a subsequent surcharge on income tax. But however they pay their fees, these will only cover part of the real costs of their education. And mature students often have families to support. In the present circumstances, more money for recurrent education would mean less money for something else, and that is a policy decision which any government would find it difficult to make. It is also the decision which, more than any other, would give a new direction to higher education, and new hope to many members of society.

c. Staff-Student Relations

The waste of people has also something to do with staff-student relationships. A definite pattern emerged from several of our studies: students would embark on a course with a good deal of enthusiasm (and some misconceptions). They would not find any way of hitching this energy to the course as 'given'; so that gradually a sense first of frustration, then disillusion, and finally resignation would set in. 'Second-year blues' seemed to be a fairly common phenomenon; by the third year, the pressure of finals and thoughts of the future tended to

dominate students' minds.

Sometimes this disillusion seemed to be the result of unfortunate first impressions: an awkward or distant member of staff; a negative tutorial or seminar; a badly-arranged induction week. Students should, no doubt, be a bit more resilient about such early failures. But the initial 'cues' given out by a member of staff - and an institution - are very important in shaping the new student's attitudes. They tend to set the tone, and it is only the unusually self-confident or assertive student who will break the pattern once it is established. What may seem trivial to the teacher can often be very important to the student. Staff should make the effort to learn students' names, for example; it is not pleasant to be treated as a cypher. There are other ways, too, in which early impressions can be made more positive. The physical environment is important; staff have their rooms, of course, but to the students, their department may be little more than an inhospitable corridor. Even small changes - like the installation of a coffee machine and the provision of a few chairs - can sometimes make a significant difference.

There is perhaps always a certain tension between a person whose role it is to teach, and another whose role it is to learn. One way in which the relationship between the two can be improved is, paradoxically, by stepping temporarily outside these roles. This seems to happen on field trips: staff and students report almost without exception that such outings do wonders for staff-student relations. Everyone can work together on a common task; staff and students can see that they are each ordinary human beings. We came across successful excursions of this kind (all with a valid academic purpose, but with a valuable social spin-off) in a variety of departments: archaeology, engineering, environmental science and geography, architecture and

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7. See for instance Newsletter 4 p.31. and Newsletter 6

planning. [7]

However, for most departments there is no equivalent to the field trip, except perhaps a residential weekend. Staff and students have to learn to talk to each other from within their respective roles. This is not always easy: it takes time, and calls for some understanding on both sides; and it is hardly surprising that on many courses, people never get round to making the effort. A student can leave a university or a polytechnic knowing very little about the intellectual life of his teachers; and they may know next to nothing of his ideas. Nor is this a problem which can be remedied simply by assigning personal tutors or advisers. Tutorial and advisory systems are only as good as the people in them: the fundamental element is a willingness to talk and to listen.

In fact, advising emerged from our study as one of the least successful aspects of higher education. It seems to be particularly ineffective for first-year students, and many of them rely mainly on their friends for help, using the tutor simply as a means of getting their name down for a course. Time and again, the picture presented by staff and that presented by students would bear little resemblance. Staff would talk of 'ever-open-doors'; students would claim that they were known only by photograph, and that termly contact consisted in "Everything O.K.?... Good".

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7. See for instance Newsletter 4 p.31. and Newsletter 6 pp. 20 and 21. The effects of field visits in promoting closer working relations between students and staff are more fully examined in Learning from Learners (See appended list of publications).

Yet some system of advising is widely thought of as necessary. More use could perhaps be made of student advisers, with third-years advising second-years, and so on. In most departments, such a grapevine already exists and could be strengthened by being recognised, encouraged and put on a more systematic basis. It might also be preferable to allow students to gravitate more easily towards members of staff who are 'natural' tutors or advisers - there are always one or two in a department - rather than being impersonally assigned to someone on a roster. In that case, such tutors might need to have their workload eased in other respects.

We are under no illusion that staff-student relations are an easy business: like other human interactions, they are fluid, inchoate and individual. There is no syllabus to fall back on. There are certainly some students who prefer a more formal, distant relationship; it preserves a certain privacy and freedom, especially for those who already know quite clearly what they want to do. But in general, our studies clearly suggest that an effort to talk things out and establish a fuller relationship is rewarded in both academic and human terms: indeed it is somewhat misleading to separate the two. A better rapport between staff and students can result in a great release of intellectual energy and interest, which is stimulating for both sides; and the course, instead of being a matter of everyday routine, can become a matter of some excitement.

d. Staff Careers

With all the current talk of student problems, one is apt to forget about staff. The permanent members of academe also have their expectations, their successes and their failures. For them, the time-frame is much longer than it is for students, and hence their reactions and emotions are much less concentrated: but they exist nonetheless.

The rapid expansion of higher education in the 1960's, and its subsequent reversal, mean that many staff now face a prospect of slow or no promotion and of remaining within a single institution for the rest of their working lives. For the lucky few, there may be a sabbatical abroad, or a chair somewhere. There are those, of course, who are unusually self-sufficient and 'inner-directed' and who can devote themselves in a more or less selfless way to their teaching and their research. But there are many who, as in other walks of life, need an occasional stimulus from the outside to prevent them becoming ground down by routine.

We soon became aware, in our own research, of the remarkable extent to which innovations in undergraduate teaching were brought about by people who had just changed job, or returned from overseas, or even switched fields in mid-career. Any arrangements which could stimulate these kinds of changes would be beneficial, especially at a time when natural mobility is at an all-time low. Staff might, for example, be helped to arrange mutual exchanges, a lecturer in Exeter perhaps going to Birmingham for a year or a term, and vice versa. Exchanges with foreign universities should be encouraged and made easier. Institutions should also be prepared occasionallly to enable a lecturer to retrain in a related field of study, so as to make the move from, say Chemistry to Biological Sciences, or German to European Studies.

A number of polytechnics and a few universities are now thinking in a rather more systematic way about how best to help staff plan their careers and make a reasonable assessment of their expectations and prospects. By doing so, they may help to ameliorate some of the more obvious mid-career frustrations. Much depends on the senior staff, and it is still rare in this country for a head of department to talk regularly to his members of staff with a view to matching their interests and expectations with the overall plans of the department.

Not all lecturers want to emphasise research, teaching and administration in that order; some may wish to concentrate on the second or third, or on academic advising. It would seem reasonable to allow them to do so, and to exercise their natural talents within the limits of institutional practicability.

Our argument in this section of the report has been that institutions should think more carefully about their human resources. Financial and material waste is often obvious; not so the waste of human talent and enthusiasm. It is not enough for universities and polytechnics simply to 'tick over': people, both inside and outside education, expect more of them; and in particular, they expect them to use people to the full. The disillusionment of some students may be due to a lack of intensity rather than anything else. Higher education should be an area of high energy.

III IDEAS

The decade of expansion was also to some extent a decade of innovation. However, it would be a mistake to assume that because expansion has now ceased, all innovation has ceased also. A different kind of innovation - small-scale, pragmatic, local - begins to gain ascendancy, contrasting sharply with the grand designs and creation of entire new institutions that characterised more expansive days.

Nevertheless there is a danger that universities and polytechnics will simply re-trench in response to the current cut-backs in expenditure. In this final section, we suggest three ways in which the higher education system can maintain its capacity for change and self-renewal. The first has to do with the review of courses; the second with the exchange of information; and the third with the provision of grants for development.

a. Periodic Review

'Keeping arrangements under continual review' is often a bureaucratic euphemism for doing nothing. The idea of periodic review has more bite, because it is more difficult to avoid: there can be no doubt whether a review has taken place or not. This principle has been endorsed by the C.N.A.A., which requires a five-yearly re-submission of all degree courses; and by the Open University, which is committed to re-making most of its courses after approximately the same length of time.

It is a practice which could be adopted with advantage in all university and polytechnic departments. It provides a necessary occasion for asking fundamental questions about courses and the ways they are taught and examined; and where course objectives have previously been formulated, it creates an opportunity to see whether they remain relevant, or should be modified.

It is difficult to raise such issues at ordinary staff meetings, since they may be very far-reaching, and colleagues are apt to brush them under the carpet with an air of pragmatic irritation. A periodic review - rather like a general election - allows large matters to be broached even if they are not always satisfactorily tackled. Departments might find it useful to bring in one or two outsiders on such an exercise: perhaps colleagues from different (but not too distant) departments in the same institution. If the job is to be done properly, there is an obvious need to collect evidence about the success or failure of the course in the years preceding the review; such evidence should certainly include students' evaluations of it.

The idea of periodic review can also be applied at a less formal level. It would seem sensible for departmental staff to come together once a year to talk about each degree programme. Usually, when they do meet, it is to carve up the teaching, or to set or mark examinations. There is often little discussion of the actual contents of the course. However, nothing remains quite static: new members of staff arrive and others leave; gaps or overlaps appear; adjustments in assessment have to be made. These kinds of changes can be usefully dealt with at an annual meeting. A few departments have already adopted this practice, with varying degrees of elaboration - some arranging a two-day residential session for all the staff concerned; others contenting themselves with a single day's meeting on campus.

Periodic feedback sessions with students are also necessary, as a slightly more structured version of the kind of discussion about courses which we mentioned under the section on 'The Quality of Teaching'. These should be held in the middle of a course - by which time students have had enough experience on which to base their comments, and yet still have a direct interest in making them. An exercise of this sort can usually be carried out quickly and without fuss;

but unless a formal occasion for it is designated, students will be loath to say anything, feeling that any comments will be taken personally. Mid-course feedback is already standard practice in several departments.

Together, these three types of review should ensure that a course does not atrophy, or conversely, fall apart from endless tinkering - a danger with many new curricular offerings. All such exercises take time; but, equally, all of them are instructive, both for staff and students.

b. Networks of Ideas

Even in a time of expansion, good ideas get wasted. Sometimes they simply remain ideas, and are never tried out in practice, because the opposition or institutional inertia is too great. There is a need for some kind of experimental protection for innovation.

In this connection, it is worth looking across the Atlantic at the Massachusetts Institute of Technology, where a committee on educational policy is empowered to licence any curricular or teaching innovation for a period of up to three years; at which point it is reviewed, and either fully implemented or scrapped. The 'licensing' includes the temporary waiving of regulations which would block the new scheme. This kind of central initiative creates a means of by-passing departmental or faculty self-interest, if the institution as a whole can be persuaded of the value of the innovation. We think it is an example that should be copied here.

In other cases, ideas are wasted because no one hears about them. British higher education is a field of local initiatives, par excellence; the corollary is that lecturers often know extraordinarily little of what is going on down the corridor, let alone in another institution. The flow of information about

teaching is as rudimentary as that about research is highly-developed; and the difference between the two is an indication of priorities.

Our own Newsletters were conceived as a means of speeding up this exchange of information about teaching. Other sources also exist: new degree courses can usually be tapped, either through the C.N.A.A., C.R.A.C., or U.C.C.A.; professional associations, particularly in medicine and the sciences, help teachers to keep up with developments in other institutions. Groups of like-minded academics form networks or 'invisible colleges' interested in simulation and educational games, the sociology of knowledge, cultural studies, computer-assisted instruction, interdisciplinary work, area studies, and many other topics. Eventually, some of these networks become fully-fledged associations and societies; others die a premature death for want of basic secretarial and financial support.

There is, in fact, a considerable waste of useful information and experience in undergraduate education. The only solution to this seems to be formal and financial support from, say, the U.G.C. and the Committee of Polytechnic Directors (or the C.N.A.A. with a grant-in-aid from the Department of Education and Science) for both the collection and distribution of information about teaching (in the broadest sense) and for the maintenance of the informal networks of academics that come into and go out of existence as need and interest dictate.

Our own work may provide some lessons in how and how not to go about this. The information should be exchanged rather than disseminated: higher education constitutes an enormously diverse gene-pool of ideas, and it is not necessarily appropriate to think in terms of innovation that is centrally rather than locally inspired. The information should be detailed enough to be worth reading, and brief enough to be read by busy teachers.

Experience with our own publications suggests that the more concrete and down-to-earth the subject matter is, the better. Educational jargon should, at almost any cost, be avoided. Finally, the exchange of information works best, it seems, if it is personal. A lecturer in one polytechnic is more likely to contact a lecturer in another polytechnic about a new curricular development (if he believes it might be relevant to him) than to read a lengthy description of the scheme. In other words, contacts between people are at least as important as documentation; and this country is small enough to make the former both feasible and natural. It helps a great deal if people can travel around and find out how things are done elsewhere, and some funds should be made available for that purpose, perhaps from departmental budgets.

There is no need - and it would be expensive and tiring- to repeat every year our own peripatetic information-gathering exercise, in which we spent 4 or 5 days in each institution meeting staff who had introduced new courses, developed new teaching approaches or otherwise tried to enhance the quality of undergraduate education. However, if a small central team of suitably-qualified staff on part-time secondment were commissioned to visit twenty universities, university colleges or polytechnics each year, on a rolling basis, every institution would be covered at least once every quinquennium. In this way, a directory of new developments, compiled along the lines of our Nuffield Newsletters, could be satisfactorily maintained and kept up to date.

A useful spin-off of such a directory of piecemeal information is that it would highlight topics for more systematic investigation, and act as an early-warning system for issues still just below the educational horizon. Our own studies of unit and modular courses, interdisciplinarity, student induction, and so on, emerged in this way. Even at the end of our project, we were still coming across new themes which merited

attention: the teaching of study skills; the experience of mature students; new curricula in the humanities; the growing problems of entry standards and selection procedures.

c. Keeping the Scope for Development

New ideas about courses, teaching, assessment, advising, and academic organisation are likely to go to waste, finally, if they are not given financial support. In hard times, institutions tend to concentrate on keeping going rather than breaking new ground. Research and development funds are among the first items to be cut in all budgets, whether it be in industry, defence, or the social services. This is an understandable but short-sighted reaction, since the price of such parsimony becomes apparent in due course. A manufacturing industry is unable to take advantage of a subsequent upturn in the market because it has no new products to sell; the defence forces have to buy new equipment from abroad; hospitals grow less, not more, efficient.

In higher education, it is even harder to argue the case for protecting research and development budgets, as against pruning them or eliminating them altogether. There are two main reasons which can be advanced. The first is intrinsic, and rests on the notion of absolute value. It is that what is being recommended is not an increase in, but simply a level-pegging of, the present very modest level of overall support. It is no more equitable to wipe out expenditure on the maintenance and self-improvement of the day-to-day processes of higher education than it is to cancel outright the existing programmes of research into particle physics. In both instances, the payoff is diffuse and hard to establish on a simple cost-benefit basis; and in both, a modest short-term gain may well transform itself into a disastrous long-term loss.

The second reason is extrinsic, and appeals to relative priorities. The average cost per annum (in 1975/6)for a university student was £1750; for a polytechnic student it was £1690. These unit costs are roughly five times those of secondary education; and eight times those of primary education; yet the great bulk of educational research and development is directed at the latter two. It seems irrational to spend so much money on higher education, and next to nothing on analysing how it is spent, or how that education might be improved.

The primary need, in the light of our experience over the past four years, is not so much for supporting large and potentially expensive inter-institutional research projects, as for the encouragement of a variety of small-scale experimental developments in courses, teaching, and assessment. A central scheme, say, of 100 small grants a year (with an upper limit of £3000 each) would do a great deal to keep innovation moving: its cost would amount to less than 0.5% of current expenditure on higher education. Each such grant might be matched on a pound-for-pound basis by the institution concerned. The Nuffield Foundation's current Small Grants Scheme for Undergraduate Teaching, which has had a wide uptake, provides some pointers. The developments should be ones likely to have some general applicability; they should have departmental backing; they should be relatively short-term; and the results should be written up and published in a form which is easily accessible to other lecturers. It would be difficult to evaluate applications for such grants adequately without the type of background information described in the previous Section- which would be available in the directory. Hence these two recommendations go together; not least because the interest in and need for such information would also be greatly increased by the availability of outside grants.

There is an old and in many ways valuable tradition in British higher education - and perhaps outside it, as well - which stresses the amateur, the makeshift, the low-key. The fact that something has been done on a

shoestring and without fuss is a source of great pride to the average academic; and there is often an instinctive dislike of formal, professional ventures, whose formalism and professionalism is symbolised by the award of money or the setting up of special programmes. However, while we sympathise with this tradition, and would be sorry to see it disappear entirely, we believe it is right that the concern for teaching should now to some extent be formalised. This means acknowledging that training is necessary, and possible; that teaching needs to be seen as a professional activity, on a par with research; and that it should be similarly rewarded in career terms. It means,too, that the study of teaching should become respectable, and that universities and polytechnics need to put money aside for improving the quality of undergraduate education. If an institution earmarks funds for a specific activity, it is a public sign that it considers it worthwhile and important. If it does not, the fact is duly noted.

In this report, we have intentionally concentrated not on resources as defined in strict financial terms, but rather on resources of a more diffuse kind, whose existence is seldom openly acknowledged. At a time of retrenchment there is a danger that people will think that the status quo cannot be radically altered, and that protectiveness and caution are the order of the day. In contrast, we believe that the challenge posed by adverse economic conditions should be taken up: that there should be enhanced institutional self-scrutiny and thoughtful change. There is a greater need than before to question old shibboleths, to reappraise organisational habits and taken-for-granted procedures, to jettison elaborate and expensive schemes that have not proved their worth. We would argue that this is above all a time for new ideas and new initiatives; that there is a more urgent need now for deliberate innovation than in the heyday of expansion, when it occurred often without threatening existing structures, ideas, and methods. We hope this report has at least convinced our readers of the case for

making better use of the most important and valuable facilities of higher education: namely its teachers and its students.

MAIN RECOMMENDATIONS

RESOURCES

1. Students can and should be given greater responsibility for their own learning. This entails giving them more information about all aspects of their courses, better access to learning materials of all kinds, and more detailed comments on their work. Optional courses on study skills can help them to become more effective learners.

2. Staff time can often be used to better advantage. Delegation of some activities may redress the overemphasis on universal participation in all decisions. The 'quality of time' could be improved by arranging blocks of time for certain activities, including teaching, so as to minimise the frustrating fragmentation of work. Committee sabbaticals might also be granted on a regular basis.

PEOPLE

3. Universities and polytechnics should take steps to make it easier for students to defer entry, to transfer between courses and institutions, to intermit a year, or to drop out; and faculties should appoint a transfer officer to assist students to make these changes.

4. Advisory schemes for students need to be improved; experiments with encouraging advising by older students should be tried; students should be allowed to gravitate towards 'natural' tutors.

5. Universities and polytechnics should admit more mature students and encourage part-time modular courses. Adult students might well be supported by increased grants or interest-free loans, repayable by a surcharge on income tax.

6. More opportunities should be given to staff for their professional development as teachers, for example by arranging for academic exchanges between institutions, and by helping interested individuals to re-train in related fields. Heads of department should play a more active role in helping junior staff to plan their careers.

IDEAS

7. All degree programmes should be formally reviewed every five years; there should be informal discussion of individual courses each year; and mid-course feedback should be a regular feature of all teaching.

8. Innovations in curricula and teaching should be institutionally approved and given experimental protection for an agreed period.

9. Interest groups concerned with specific teaching topics should be supported, and information about new developments in undergraduate education should be systematically collected and exchanged by a centrally-sponsored agency.

10. The same agency should establish a small grants scheme on a matching pound-for-pound basis to support experimental teaching developments.

GROUP FOR RESEARCH AND INNOVATION IN HIGHER EDUCATION

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